

ABSTRACT

A manufacturing method of a semiconductor device includes: providing a groove having a thickness equal to or larger than a finishing thickness on a first surface of a semiconductor wafer on which a semiconductor element is formed; affixing a PSA tape onto the first surface of the semiconductor wafer in which the groove is formed; reducing the thickness of the semiconductor wafer by processing a second surface opposite to the first surface of the semiconductor wafer onto which the PSA tape is affixed, so as to separate the semiconductor wafer into a plurality of semiconductor chips on which the semiconductor element is formed; affixing an adhesive layer onto an entire rear surface of the separated semiconductor wafer; cutting the adhesive layer so as to separate the adhesive layer for each of the semiconductor chips; and peeling off the PSA tape from the semiconductor wafer while fixing the semiconductor wafer under suction by use of a porous member segmented into at least two sucking areas.